

17949

16117

3 Hours / 100 Marks

Seat No.

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- Instructions* – (1) All Questions are *Compulsory*.
- (2) Answer each next main Question on a new page.
- (3) Illustrate your answers with neat sketches wherever necessary.
- (4) Assume suitable data, if necessary.
- (5) Use of Non-programmable Electronic Pocket Calculator is permissible.

Marks

1. **Attempt any FIVE of the following:** **20**
- a) State the general requirements of electrical installation. (any 4)
- b) Draw symbols for push button, pendant switch, earth point, two pole switch, neutral link, surface conduit wiring, fuse and bus bar.
- c) State the different types of service connections and their features.
- d) Draw neat labelled diagram showing service connections for 11 kV, H.T. consumer.
- e) State the factors to be considered for selection of wire for electrical installation.
- f) State the difference between residential and commercial installation.
- g) Explain the concept of motor wiring with the help of single line diagram.

P.T.O.

2. Attempt any TWO of the following:

16

- With a simple example show the difference between schematic diagram, circuit diagram, wiring diagram and single line diagram as per IS code.
- Give the comparison between underground and over head service connection. (any eight).
- Give the types of cables used in commercial installation. Also state the factors to be considered for their selection.

3. Attempt any TWO of the following:

16

- Determine the length of batten and length of wire for residential installation shown in Fig. No. 1.

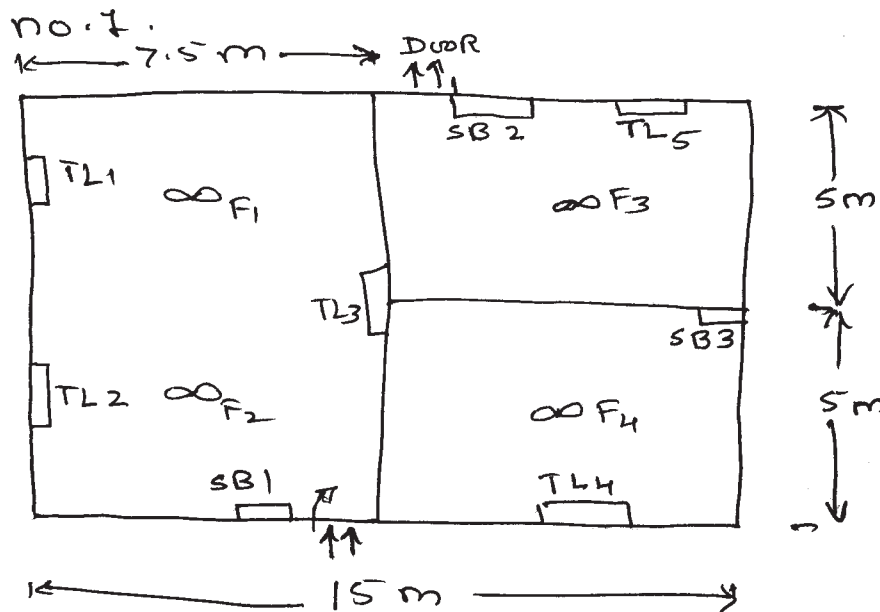


Fig. No. 1

- A four storey shopping complex has ten shops on each floor. Each shop is provided with 4 tubelights, 2 fans and 2 5A socket and one power socket. Calculate the total load of the building and number of circuits and subcircuits.
- Four 3-ph, 400V, 10 H.P. induction motors are installed in a shop floor of a small scale industry. Determine the ratings of wiring accessories such as main switch, busbar, MCB and ELCB.

4. Attempt any TWO of the following.

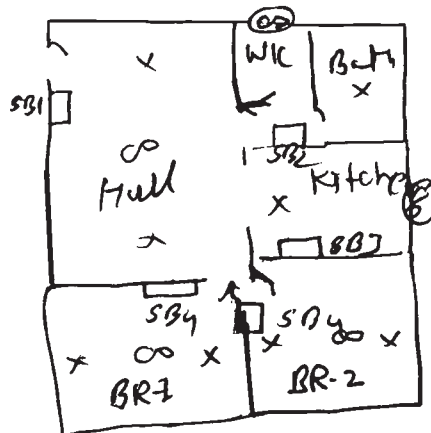
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- Prepare the list of material with costing for residential installation shown in Fig. No. 1.
- State the stepwise procedure to estimate the cost of commercial installation considering cost of material, cost of labour,, contingencies charges and profit margins.
- With the help of neat diagram explain the method of earthing for industrial installation.

5. Attempt any TWO of the following:

16

- Design electrical installation scheme and draw single line diagram for electrical installation of a residential flat as shown in Fig. No. 2. Assume proper wattage and other required.



SB1- two, 5A sockets
 SB2- one 15A socket
 SB3- two 5A socket
 SB4 two - 5A socket
 SB5 two - 5A socket

Fig. No. 2

- Mention the significant points to be considered in designing electrical installation of an industrial consumer.

- c) Explain the following terms -
- Security deposit
 - Comparative statement
 - Technical sanction
 - Administrative sanction

6. Attempt any TWO of the following:

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- a) Explain the procedure for submission of tenders and also for opening of tenders.
- b) State the explain the types of contracts and tenders.
- c) State the difference between 'power wiring' and 'motor wiring'. Also prepare the list of material along with costing required for shopping complex given in Q. No. 3 (b).
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